EPA Superfund Explanation of Significant Differences for the Record of Decision:

Bailey Waste Disposal Superfund Site - Pit B
Orange County, Texas
05/01/96

132190

EXPLANATION OF SIGNIFICANT DIFFERENCE

I. INTRODUCTION

Site Name and Location:

Bailey Waste Disposal Superfund Site
Orange County, Texas

Lead and Support Agencies:

U.S. Environmental Protection Agency (EPA) -- Lead Agency
Texas Natural Resource Conservation Commission (TNRCC) -- Support Agency

Statute that required Explanation of Significant Difference (ESD):

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Section 117(c) and National Oil and Hazardous Substances Contingency Plan (NCP), Section 300.435(c)(2)(i).

Purpose of ESD

The purpose of an ESD is to describe changes in the remedial action due to unforeseen conditions encountered at the site during implementation of the Record of Decision (ROD). Unforeseen conditions at the Bailey Waste Disposal site require the EPA to modify the remedial action described in the June 28, 1988 ROD for one area of the site, Pit B. The ROD provides that waste materials in the site's Waste Channel will be stabilized in place, followed by capping of the stabilized area. Pit B, which is considered part of the Waste Channel, needs to be handled differently from the remainder of the site due to the nature of the waste located in this area. The purpose of this ESD is to inform the public that the Pit B waste and underlying affected soils will be taken offsite for disposal in a Class 1 industrial waste landfill. Circumstances that gave rise to the need for this ESD include:

- the opportunity to expedite the Pit B waste remedy component by taking this waste offsite for disposal;
- anticipated difficulties in successfully stabilizing the Pit B waste due to the oily, tarry, and organic nature of the waste; and

- removing the Pit B waste from the site will remove a potential source for a future release of contaminants from Pit B to the surrounding surface waters (Pit B may have been the source of the waste which migrated into the North Marsh and which has recently been remediated (ESD North Marsh, February 1996)).

Administrative Record:

This ESD will become part of the Administrative Record of the Bailey Waste Disposal Superfund site. The administrative record is available to the public for review during regular business hours at the following locations:

U.S. Environmental
Protection Agency, Region 6
12th Floor Library
1445 Ross Avenue
Dallas, Texas 75202-2733
~~(214)665-6427 or~~ (214)665-6424

Nederland Public Library
1903 Atlanta
Nederland, Texas 77627
(409)722-1255

II. SUMMARY OF SITE HISTORY, CONTAMINATION PROBLEMS, AND SELECTED REMEDY

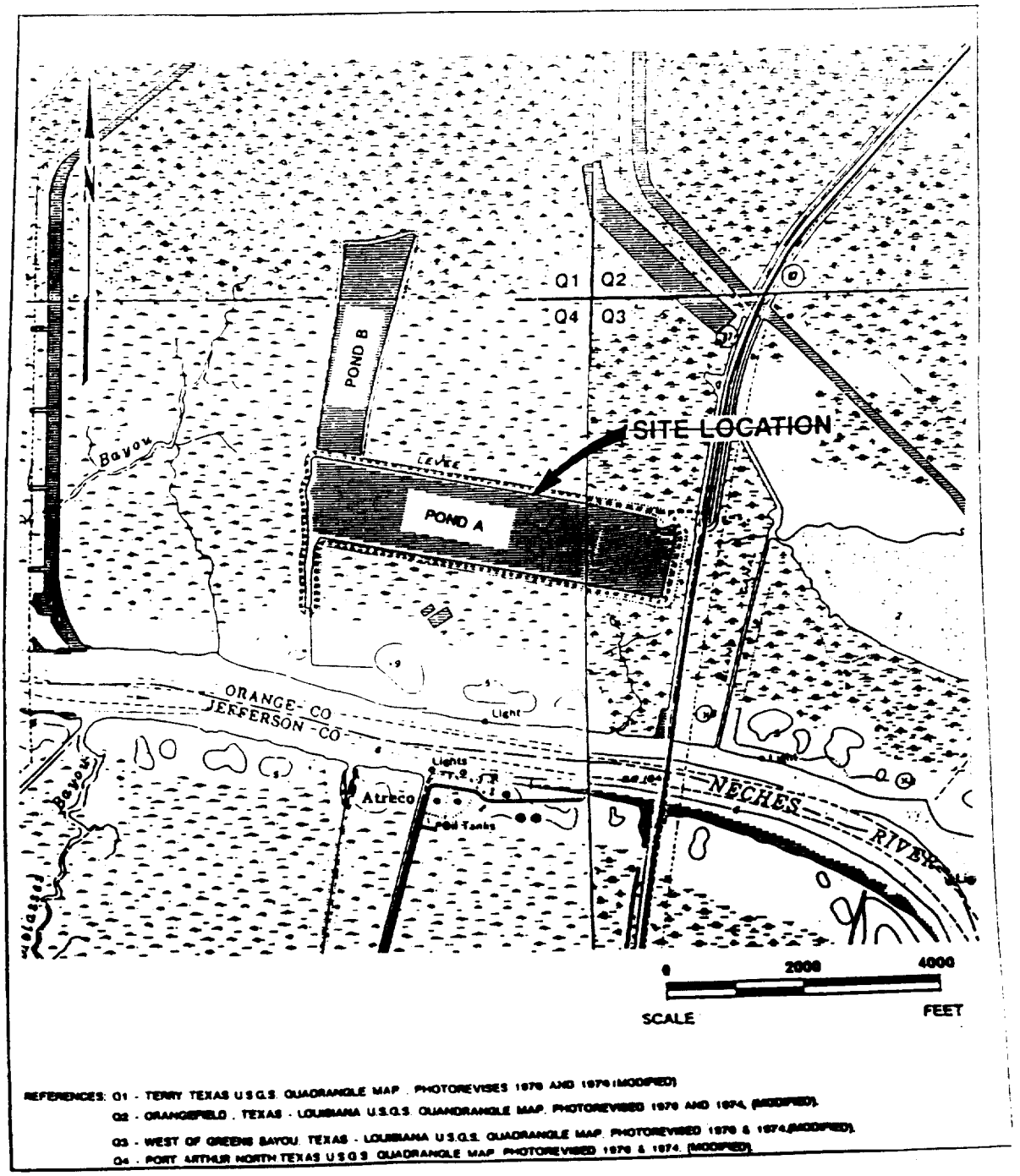
The Bailey Waste Disposal Superfund site is an inactive waste disposal site located approximately three miles southwest of Bridge City in Orange County, Texas. The site was part of a tidal marsh near the confluence of the Neches River and Sabine Lake. Two ponds, A and B, were constructed on the property as part of the Bailey Fish Camp in the early 1950s by dredging the marsh and piling the sediments to form levees which surround the ponds (see Figure 1). The fish camp was active until September 1961 when it was destroyed by Hurricane Carla which introduced saline waters into the ponds, killing the freshwater fish. The site, including the two rectangular ponds, occupies approximately 280 acres.

Industrial waste (e.g., sludge from local petrochemical industries) was disposed of within the levees along the north and east margins of Pond A during the 1950s and 1960s (see Figure 2). This waste contains a wide variety of volatile organic compounds, aromatic hydrocarbons (i.e., ethylbenzene, styrene, benzene), and heavy metals (i.e., lead, arsenic, chromium, zinc). The site was also used to dispose of residential trash. The Bailey Waste Disposal site was closed in 1971.

The site was proposed for the National Priorities List (NPL) of Federal Superfund sites in 1984. The site was placed on the NPL in 1986. A remedial investigation was completed for the site in October 1987 and a feasibility study was completed in April 1988. The Record of Decision was signed on June 28, 1988.

FIGURE 1

VICINITY MAP
BAILEY WASTE DISPOSAL SITE
ORANGE COUNTY, TEXAS



REFERENCES: Q1 - TERRY TEXAS U.S.G.S. QUADRANGLE MAP, PHOTOREVISED 1978 AND 1979 (MODIFIED)
Q2 - ORANGEFIELD, TEXAS - LOUISIANA U.S.G.S. QUANDRANGLE MAP, PHOTOREVISED 1970 AND 1974, (MODIFIED).
Q3 - WEST OF GREENS BAYOU, TEXAS - LOUISIANA U.S.G.S. QUADRANGLE MAP, PHOTOREVISED 1978 & 1974,(MODIFIED).
Q4 - PORT ARTHUR NORTH TEXAS U.S.G.S. QUADRANGLE MAP, PHOTOREVISED 1978 & 1974, (MODIFIED).

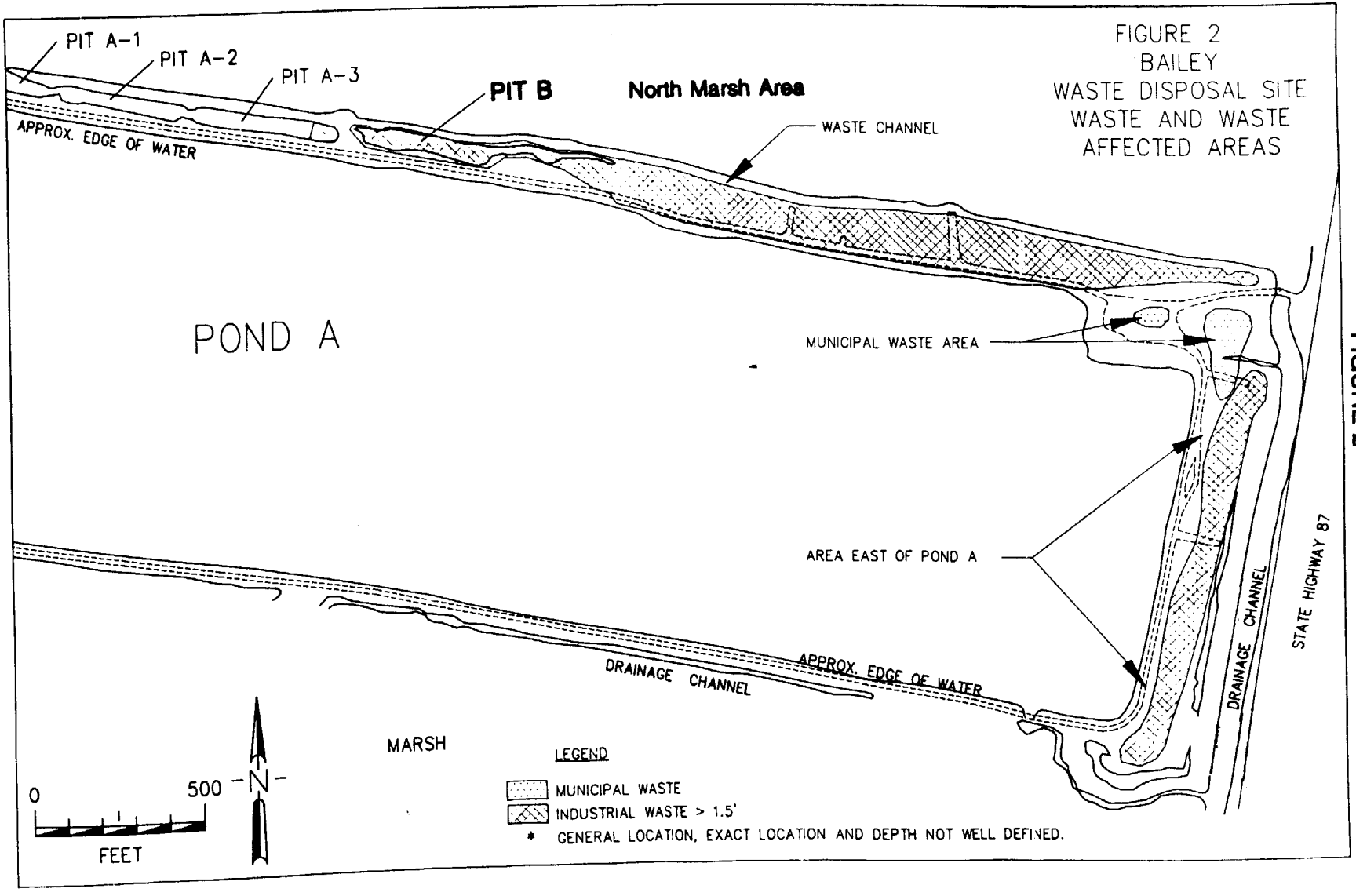


FIGURE 2
BAILEY
WASTE DISPOSAL SITE
WASTE AND WASTE
AFFECTED AREAS
PIT A-1
PIT A-2
PIT A-3
PIT B
North Marsh Area
WASTE CHANNEL
APPROX. EDGE OF WATER
POND A
MUNICIPAL WASTE AREA
AREA EAST OF POND A
DRAINAGE CHANNEL
APPROX. EDGE OF WATER
DRAINAGE CHANNEL
STATE HIGHWAY 87
MARSH
0
500
FEET
N
LEGEND
MUNICIPAL WASTE
INDUSTRIAL WASTE > 1.5'
* GENERAL LOCATION, EXACT LOCATION AND DEPTH NOT WELL DEFINED.

FIGURE 2

Remedy Set Forth in the Record of Decision

The overall site remedy, as originally described in the ROD, addressed the environmental threat at the site by consolidating, stabilizing and capping all site waste to prevent human contact and future migration. The specific ROD remedy component pertaining to the Pit B waste called for stabilization of the Waste Channel (which includes Pit B) using the technique developed during the remedial design followed by capping.

III. DESCRIPTION OF THE SIGNIFICANT DIFFERENCES AND THE BASIS FOR THOSE DIFFERENCES

Scope

The original remedy, as discussed previously, called for consolidating, stabilizing and capping of all the site waste to prevent human contact and future migration. This ESD only addresses the Pit B waste which constitutes less than three percent (4,000 cubic yards) of the estimated total site waste volume (156,000 cubic yards). The remedy in this ESD also differs from the original remedy in that it does not specifically call for stabilization of the waste. However, prior to excavating the Pit B waste, some waste conditioning (i.e., addition and in place mixing of lime-kiln dust) will take place to improve the waste material handling properties and to deactivate any reactive sulfides. In addition, Pit B waste will be solidified, if required, prior to placement in the landfill to facilitate handling [Technical Memorandum Pit B Pre-Design Study, GeoSyntec Consultants, April 1996].

The most significant difference between the two remedies is that the remedy in this ESD will result in the Pit B waste being taken offsite for disposal in a Class 1 industrial waste landfill. Based on experience with the North Marsh remediation (North Marsh waste exhibited similar characteristics to the Pit B waste), the offsite disposal option has the strong likelihood of success, and the low potential for implementation problems associated with unforeseen conditions.

Performance

Significant performance differences of the two remedies fall into three criteria - short term effectiveness, long term effectiveness, and technical implementability. Regarding short term effectiveness, the remedy in this ESD can be completed within the next few months by the contractor who recently completed the North Marsh waste remediation work (the contractor and equipment are still onsite). Initiation of the Pit B removal work would result in reducing the mobility of the constituents in the Pit B

waste by removing Pit B waste from the site and placing the waste in a Class 1 industrial waste landfill. As stated previously, it is possible that Pit B may have been the source of the waste located in the North Marsh which has recently been remediated. In addition, the original site remedy is currently being reevaluated due to waste stabilization problems encountered at the site [Technical Memorandum Supplemental North Marsh Area Site Investigation and Evaluation of Original Remedy, GeoSyntec Consultants, October 1995]. Therefore, it is uncertain at this time as to when or if Pit B would be addressed under the original remedy.

The long term effectiveness of the original remedy, if it can be successfully implemented, would effectively reduce contaminant mobility. However, if stabilization is not successful, additional containment measures (i.e., sheet piling, slurry walls, etc.) may be necessary to prevent future migration of waste from Pit B to areas already remediated (i.e., North Marsh Area). The long term effectiveness of the Pit B offsite option is considered good. The mobility of the Pit B waste would be significantly reduced if the waste were excavated and placed in an Class I industrial waste landfill. Waste would be solidified, if required, prior to placement in the landfill to facilitate handling. Solidification would further reduce the mobility of Pit B contaminants.

Regarding technical impracticability differences, while the original remedy could potentially be implemented in Pit B, in-situ stabilization would be difficult due to the oily, tarry, and organic nature of the waste. Even at areas which are less difficult to remediate, there have been significant problems and uncertainties regarding stabilization which have led to the current reevaluation of the selected remedy. The difficulties of implementing the remedy in this ESD are more easily addressed through adequate engineering controls, as evidenced by the success of the waste removal activities performed in the North Marsh Area [Technical Memorandum Pit B Pre-Design Study, GeoSyntec Consultants, April 1996]. The difficulties which must be addressed during the implementation of the remedy will include: difficulties in excavating and loading waste into trucks due to the composition and consistency of the waste; difficulties with controlling seepage into excavations; the potential necessity of waste conditioning to deactivate reactive sulfides that exists in the waste above the threshold limit of 500 mg/kg and to improve material handling characteristics; and the possibility that air emissions during excavation, if not adequately managed, could pose a risk to workers at the site.

Costs

Based on an evaluation of the performance of the original remedy to date and an evaluation of typical costs to construct a cap, the cost for the original remedy for Pit B is estimated at $660,000. If stabilization is not successful, additional containment measures (i.e., sheet piling, slurry walls, etc.) may be necessary to prevent future migration of waste from Pit B. There are significant uncertainties in the

cost estimate for implementing the original remedy at Pit B, as well as additional costs which are not included in the estimate for long-term maintenance.

Cost for the ESD remedy include: (i) waste conditioning; (ii) removal and disposal of the waste from Pit B; (iii) backfilling with clean fill; and (iv) construction of a lightweight cap. The construction costs of performing this remedy are estimated $1,037,900. This estimate is based on the costs of performing the remediation of the North Marsh Area (i.e., excavation and disposal costs), and the following assumptions:

- 4,000 cubic yards of Pit B material (in-place volume);
- waste conditioning (in place) will be required;
- the waste may be disposed at a Class I industrial waste landfill (non-hazardous);
- pre-disposal solidification of the excavated waste will occur at the disposal facility; and
- the area will be backfilled with clean fill following waste removal.

The following considerations are also relevant for implementation of this ESD remedy:

- the Pit B waste will be removed from the site, therefore there are no long-term maintenance requirements and costs for Pit B;
- there is a possibility of partially backfilling Pit B in an effort to restore wetland potential and to reduce material costs;
- an estimated costs savings of $100,000 - $150,000 can be realized by (i) not having to remobilize a contractor on the site for this remediation, and (ii) reducing the total duration of the project;
- there are fewer uncertainties in implementation, as demonstrated by the successful removal and offsite disposal of similar materials from the North Marsh.

(See Table 1 for summary of comparison of Original Remedy versus Offsite Disposal)

All current applicable federal and state regulations will be met for the transport of the Pit B waste to the receiving Class 1 industrial waste landfill. In accordance with EPA's Offsite Policy (40 C.F.R. Section 300.440), and specifically with regards to the receiving landfill (Browning Ferris Industries Anahuac Landfill), the TNRCC in an October 27, 1995, Current Assessment of Compliance Summary stated:

TABLE 1 SIGNIFICANT DIFFERENCES - PIT B WASTE

ORIGINAL REMEDY	OFFSITE DISPOSAL
Description: o Stabilize waste in place and cap.	Description: o Offsite disposal of Pit B waste in a Class 1 industrial waste landfill.
Significant Differences:	
Scope: o Addressed entire site waste (156,000 cubic yards). o Waste to be stabilized.	Scope: o Addresses Pit B waste (4,000 cubic yards). o Waste conditioned (add lime) and possibly solidified at landfill.
Performance: o Uncertain implementation schedule. Short term potential of Pit B waste to recontaminate North Marsh area. o Due to nature of waste, stabilization will at best be difficult.	Performance: o Can be completed within next few months. Mobility of waste reduced by placement in landfill. o Waste will need to be conditioned to remove reactive sulfides prior to disposal.
Costs: o Estimated costs = $660,000.	Costs: Estimated costs = $1,037,900*
Other Considerations: o Pit B waste would remain onsite and would require long-term maintenance. o If Pit B stabilization is not successful, additional containment measures (i.e., sheet pile, slurry walls) may be necessary to prevent future migration of waste from Pit B	Other Considerations: o No long-term Pit B maintenance requirements and costs. o Estimated cost savings of $100,000 - $150,000 by not having to remobilize contractor and by reducing project schedule.

* Based on the following assumptions:

- 4,000 cubic yards of material;
- waste conditioning (in place) will be required;
- the waste may be disposed at BFI's Class I industrial waste landfill (non-hazardous) located in Anahuac, Texas;
- pre-disposal solidification of the excavated waste will occur at the disposal facility; and
- the Pit B area will be backfilled with clean fill following waste removal.
- note if capping of the area is not required, this cost becomes $912,600.

- in general, the facility appears to be operating within the limitations set in its permit;

- Compliance Evaluation Inspections performed in the last five years at the subject facility noted no alleged violations;

- there have not been any spills reported at the subject facility in the last five years;

- no enforcement action is pending; and

- no prior enforcement action has occurred in the last five years for this facility.

If the Browning Ferris Industries Anahuac landfill is unable to receive the waste, the alternative landfill will be required to be in compliance with the EPA Offsite Policy (40 C.F.R. Section 300.440).

The EPA has determined that the Resource Conservation and Recovery Act (RCRA) land disposal restrictions (LDRs) are applicable for the offsite disposal of the Pit B waste. According to the Amended Phase III Rule (Apr. 8, 1996), once a reactive sulfide waste has been deactivated in accordance with treatment standards in 40 C.F.R. Section 268.40, it is not necessary to treat the waste for any underlying hazardous constituents. The table in 40 C.F.R. Section 268.40 lists the treatment standard for Waste Code D003 "Reactive Sulfides Subcategory based on 261.23(a)(5)" as "DEACT" (i.e., deactivation). The results of analyses of Pit B waste indicate the presence of reactive sulfides at levels that exceed 500 mg/kg (i.e., the current EPA interim guidance level for total releasable sulfides). This level is currently used by landfill facilities, including the BFI Anahuac facility, as the waste acceptance criterion for reactive sulfides. In an effort to address the reactive sulfide issue, a recent field demonstration was conducted and found that by adding 5 - 7.5 percent lime-kiln dust, the concentration of reactive sulfide was consistently reduced to less 500 mg/kg.

IV. SUPPORT AGENCY COMMENTS

The Texas Natural Resource Conservation Commission (TNRCC) was provided a draft copy of this ESD for review and comment. All of the TNRCC's comments have been incorporated into this document.

V. PUBLIC PARTICIPATION ACTIVITIES

This ESD will become part of the Administrative Record for the Bailey Waste Disposal Superfund site, will be made available to the public, but will not be distributed for public comment. For additional information regarding this ESD, please contact the EPA Project Manager for the Bailey Waste Disposal Superfund site:

Chris Villarreal
U.S. Environmental Protection Agency
1445 Ross, Avenue (6SF-AT)
Dallas, Texas 75202-2733
(214) 665-6758

VI. STATUTORY DETERMINATIONS

After consideration of the new information developed during the remedial action and the resulting changes from the selected remedy described in the ROD, the EPA believes that the remedy remains protective of human health and the environment. The revised remedy utilizes permanent solutions to the maximum extent practicable for this site and is cost-effective. It complies with the NCP and other federal and state requirements that are applicable or relevant and appropriate to this remedial action.

Jane N. Saginaw
Regional Administrator

MAY 01 1996
Date